

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	Group Art Unit:	1792
Canan Uslu Hardwicke et al.	§		
	§	Confirmation No.:	1348
Serial No.: 10/611,745	§		
	§	Examiner:	David P. Turocy
Filed: June 30, 2003	§		
	§		
For: METHOD FOR FORMING A	§	Atty. Docket:	121278-1
FLOW DIRECTOR ON A HOT	§		
GAS PATH COMPONENT	§		

Sir:

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

In response to the Final Office Action of January 16, 2008, Appellants respectfully submit this Pre-Appeal Brief Request for Review. This request is being filed concurrently with a Notice of Appeal. In the Final Office Action mailed on January 16, 2008, the Examiner essentially reiterated the rejection formulated in the previous non-final Office Action. Because the Appellants believe that the rejections are improper, the present Appeal has been filed.

**Rejections under 35 U.S.C. § 102**

The Examiner rejected claims 1-5, 10-20 and 23 and 27 as rejected under 35 U.S.C. §102(b) as being anticipated by Bunker et al. (U.S. Patent No. 6,234,755; hereinafter "Bunker"). Rejected claims 1 and 17 are independent and will be discussed in detail below.

**Claims 1 and 17**

Amended claim 1 recites, *inter alia*, "forming a plurality of discrete flow directors on a component comprising a wall having at least one film-cooling hole extending through the wall and defining an exit site, wherein at least one of the *discrete* flow directors is associated with *each* of the at least one film cooling hole and wherein each of the flow directors comprises a three-

dimensional projection disposed external to the cooling hole and having limited dimensions in three directions.”

Amended claim 17 recites, *inter alia*, “forming a plurality of discrete flow directors on a turbine component comprising a wall having a cold surface and a hot surface, wherein at least one film-cooling hole extends through the wall for flowing a coolant from the cold surface to the hot surface, the film-cooling hole defining an exit site in the hot surface of the wall, wherein at least one of the *discrete* flow directors is associated with *each* of the at least one film cooling hole and wherein each of the flow directors comprises a three-dimensional projection disposed external to the cooling hole and having limited dimensions in three directions.”

Appellants thus submit that amended independent claims 1, and 17 recite, in generally similar language, forming a plurality of discrete flow directors, wherein at least one of the discrete flow directors is associated with each of the at least one film cooling hole and wherein each of the flow directors comprises a three-dimensional projection. *See* Application, paragraphs [0033] [0034] [0036] and [0045]; Figs. 3-7, Figs. 16-17.

The Examiner argued that Bunker discloses a method of forming a flow director (by forming a slot over the holes) on a component comprising a wall by depositing at least one layer on the wall of the component, wherein said deposition includes shaping the layers in accordance with the predetermined shape of the flow director and therefore forming the flow director that extends radially outwards from the initial wall of the component and into a hot gas flow path . Further, the Examiner argued that there are two walls to the slot and therefore there is a plurality of discrete flow directors for each slot and one of the flow directors is associated with one of the film cooling holes. The Examiner cited passages at col. 2, lines 20-24 and lines 50-60 and Fig. 3 of Bunker in support of the rejection.

Appellants respectfully submit that first Bunker fails to teach a plurality of discrete flow directors, wherein at least one of the *discrete* flow directors is associated with *each* of the at least one film cooling hole. Rather, Bunker teaches forming a single continuous slot within a high

temperature surface of the substrate such that the cooling holes are within the slot. The cooling holes are between the two walls of the slot.

Bunker teaches a slot that would extend partly inwardly and perpendicularly from each hot surface toward the cooler surface. The slot also extends longitudinally along a selected dimension of holes. Further, the slot serves as a spillway trench for coolant air exiting cooling holes. *See*, Bunker, col. 6, lines 27-35 and col. 7, lines 1-10. The slot, however, is a depression on the surface. The walls of the slot do not project outward from the surface, but depend into the surface unlike the discrete flow directors that project outward from the surface. Therefore, the walls of the slot are not projections on the surface as the discrete flow directors. The three-dimensional discrete flow directors are projecting features on top of the surface.

Clearly, Bunker does not teach discrete flow directors, with at least one discrete flow director associated with each film cooling hole and wherein each of the flow directors comprises a three-dimensional projection. Appellants respectfully submit that a *prima facie* case of anticipation cannot be supported by Bunker against claims 1 and 17.

Therefore, it is submitted that independent claims 1 and 17 and their dependent claims are allowable and the Appellants respectfully request to reconsider rejection of the claim.

### **Rejections Under 35 U.S.C. § 103**

The Examiner rejected claims 1-5, 10-20, 23, 24 and 27 under 35 U.S.C. §103(a) as being unpatentable over Bunker.

As discussed above, Bunker fails to teach a plurality of discrete flow directors, wherein at least one of the *discrete* flow directors is associated with *each* of the at least one film cooling hole and wherein each of the flow directors comprises a three-dimensional projection. Rather, Bunker teaches forming a single continuous slot within a high temperature surface of the substrate such that the cooling holes are within the slot. The walls of the slot do not project outward from the surface, but depend into the surface unlike the discrete flow directors that project outward from

the surface. Therefore, the walls of the slot are not projections on the surface as the discrete flow directors.

Therefore, it is submitted that independent claims 1 and 17 and their dependent claims are allowable and the Appellants respectfully request to reconsider rejection of the claim.

Respectfully submitted,

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